

DATA AVAILABLE

- A. Summary info for registrations and permit actions in the Uintah & Ouray Indian Reservation
[Data Steward – Victoria Parker-Christenson]

Type of Action	Total	Number of affected companies
Registrations	5460	27
Part 71 permit actions pending	18	9
Part 71 permit actions issued	11	5
Syn Minor NSR permits issued	1	1
Syn Minor NSR permits pending	7	4
True Minor NSR permits pending	1	1
PSD issued	1	
Total	5499	

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Company (27) - November 2014	# Facilities Registered	# Producing/Active Wells 2013
Kerr-McGee Oil and Gas Onshore LP	1966	2619
EOG Resources, Inc.	1272	1328
QEP Energy Company	683	855
XTO Energy, Inc	568	606
Berry Petroleum Company	367	789
Newfield Production Company	243	1249
Crescent Point Energy U.S. Corp	63	178
Ultra Resources, Inc.	53	0
Bill Barrett Corporation	52	211
El Paso Midstream Group, Inc	37	70
Whiting Petroleum Company	36	22
EP Energy E&P Company, L.P.	31	248
Koch Exploration Company	31	12
Anadarko Uintah Midstream, LLC	18	incl. w/ Kerr-McGee
Rosewood Resources, Inc.	9	27
Enduring Resources, LLC	6	76
QEP Field Services Company	5	incl. w/ QEP Energy
Ute Energy, LLC	4	0
Gasco Energy, Inc	3	127
Red Rock Gathering Company, LLC	3	--
Axia Energy, LLC	2	43
Monarch Natural Gas, LLC	2	--
American Gilsonite Company	1	
Linn Energy, LLC	1	
Mid-America Pipeline Company, LLC	1	
Red Leaf Resources, Inc.	1	
Rhine Construction	1	
US Oil Sands (Utah) Inc.	1	
Grand Total	5460	8460

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NO Tribal Minor Source Registration Rec'd	# Wells (2013) Exterior Bound.
PETROGLYPH OPERATING COMPANY INC	183
COASTAL OIL & GAS CORP.	87
DEVON ENERGY CORPORATION	80
WEXPRO COMPANY	65
CITATION OIL AND GAS CORPORATION	43
FINLEY RESOURCES, INC.	36
ELK PRODUCTION UINTAH, LLC	28
FOUNDATION ENERGY MANAGEMENT, LI	24
QUINEX ENERGY CORP	18
MCVELAIN ENERGY, INC.	13
SUMMIT OPERATING, LLC	12
WOLD OIL PROPERTIES, INC	12
MUSTANG FUEL CORPORATION	11
UINTAH INVESTORS LLC	9
DEL-RIO RESOURCES INC	8
FIML NATURAL RESOURCES, LLC (FNR)	8
HARVEST (US) HOLDINGS, INC	8
THURSTON ENERGY OPERATING	7
RIM OPERATING, INC.	6
(N/A)	5
BEARTOOTH OIL & GAS COMPANY	5
HOMELAND GAS & OIL, INC.	5
WESTSTAR EXPLORATION INC	5
APPALOOSA OPERATING COMPANY LLC	4
CNG PRODUCING COMPANY	4
COCHRANE RESOURCES INC	4
MILLER, DYER & CO. LLC	4
ROBERT L BAYLESS PRODUCER, LLC	4
TIGER ENERGY OPERATING, LLC	4
WIND RIVER RESOURCES INC	4
CIG EXPLORATION, INC.	3
ENERVEST OPERATING, LLC	3
NATIONAL FUEL CORPORATION	3
MAR/REG OIL COMPANY	2
BALLARD PETROLEUM HOLDINGS, LLC	1
BARRETT RESOURCES CORPORATION	1
CANNON, ROBERT	1
EMERY RESOURCE HOLDINGS LLC	1
ENCANA OIL & GAS(USA) INC.	1
FRIAR OIL CO	1
GAS PRODUCING ENTERPRISES, INC.	1
JMD ENERGY INC	1
MAK-J ENERGY PARTNERS LTD	1
MAXIMUM ENERGY CORPORATION	1
MOUNTAIN OIL AND GAS INC	1
SOUTHWESTERN ENERGY VENTURES COM	1
STEWART PETROLEUM CORPORATION	1
UINTA-TAYLOR FUND, LTD	1
VANTAGE ENERGY UINTA LLC	1
YATES PETROLEUM CORPORATION	1
TOTAL	733

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B. Status on 4th Highest Max and Design Values in Uinta Basin by year [Data Steward – Richard Payton]

All Data: 4th Max 8-hour O3, ppb (NAAQS = 75 ppb)

Year	Dinosaur	Vernal	Redwash	Ouray	Roosevelt	Myton	Whiterocks	Fruitland	Rangely
Regulatory?	Jan'14	YES	Apr'13	Apr'13	YES	Apr'13	Apr'13	YES	YES
2007	63								
2008	66								
2009	63		67	67					
2010	68		98						58
2011	90		100			111	68	65	73
2012	75	64	67	70	67	71	69	70	69
2013	113	102	114		104	109	95	62	91
2014	64	62	63	79	62	67	64	64	62

Regulatory and Non Regulatory Design Values	Dinosaur	Vernal (Regulatory)	Redwash	Ouray	Roosevelt (Regulatory)	Myton	Whiterocks	Fruitland (Regulatory)	Rangely (Regulatory)
'11-'13	92.7		93.7	106.0		97.0	77.3	65.7	77.7
'12-'14	84.0	76.0	81.3	93.7	77.7	82.3	76.0	65.3	74.0

75 ppb NAAQS

Air Quality Index:

Green	Good
Yellow	Moderate
Orange	Unhealthy for Sensitive Groups
Red	Unhealthy
Purple	Very Unhealthy

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- The State and Tribe recommendations on designation in Oct16
- Three years of “regulatory” data from all monitors shown above (except Dinosaur) that can be used to determine the Design Value for the Uinta Basin
- With the current 93.7 Design Value from the Ouray monitor, the area could be classified as Serious

Nonattainment Designation Classification	Design Value (ppb)		
	Current 75 ppb Ozone NAAQS	70 ppb Ozone NAAQS (Estimated)	65 ppb Ozone NAAQS (Estimated)
Marginal	76 - <86	71 - <80	66 - <75
Moderate	86 - <100	80 - <93	75 - <87
Serious	100 - <113	93 - <105	87 - <98
Severe	113 - <119	105 - <111	98 - <103
Extreme	119 - <175	111 - <163	103 - <152

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C. Emission data in Uinta Basin

- WRAP – Phase III *[Data Steward – Cindy Beeler]*

UINTA BASIN - WRAP PH.III										
Description	2006 Emissions (tons/year)					2012 Emissions (tons/year)				
	NOx	VOC	CO	SOx	PM10	NOx	VOC	CO	SOx	PM10
Dehydrator	148	19,470	124	0	11	225	30,665	189	0	17
Pneumatic devices	0	14,916	0	0	0	0	25,083	0	0	0
Oil Tank	0	14,357	0	0	0	0	20,722	0	0	0
Pneumatic pumps	0	8,386	0	0	0	0	14,322	0	0	0
Condensate tank	0	6,195	0	0	0	0	21,719	0	0	0
Unpermitted Fugitives	0	1,910	0	0	0	0	3,212	0	0	0
Permitted Sources	2,339	1,320	927	5	32	3,184	4,355	2,517	8	48
Truck Loading of Oil	0	964	0	0	0	0	1,391	0	0	0
Venting - Compressor Startup	0	825	0	0	0	0	1,300	0	0	0
Venting - Compressor Shutdown	0	782	0	0	0	0	1,233	0	0	0
Artificial Lift	2,184	674	2,522	1	94	3,053	955	34,750	2	136
Compressor engines	2,207	510	2,318	0	31	3,169	695	4,236	0	46
Drill rigs	4,779	415	1,804	362	354	4,773	362	1,507	3	236
Venting - blowdowns	0	292	0	0	0	0	460	0	0	0
Venting - initial completions	0	241	0	0	0	0	332	0	0	0
Truck Loading of Condensate	0	127	0	0	0	0	445	0	0	0
Heaters	1,016	58	863	7	80	1,671	95	1,420	11	132
Miscellaneous engines	163	39	59	0	1	199	63	201	0	1
Venting - recompletions	0	37	0	0	0	0	51	0	0	0
Workover rigs	255	24	103	21	21	271	22	91	0	15
Gas Plant Truck Loading	0	3	0	0	0	0	12	0	0	0
Condensate tank flaring	1	0	3	0	0	2	0	9	0	0
Dehydrator Flaring	0	0	1	0	0	0	0	1	0	0
Initial completion Flaring	1	0	3	0	0	1	0	4	0	0
Total	13,093	71,546	8,727	396	623	16,547	127,495	44,925	24	631

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C. Emission data in Uinta Basin

- EPA R8 Minor Source Registration & Permitted Source Emissions – On Indian country *[Data Steward – Victoria Parker-Christenson]*

Operator	# Registrations	PM10	PM2.5	SO2	NOx	CO	VOC
EOG Resources, Inc.	1272				254	215	18,622
XTO Energy, Inc	568	53	53	90	4,851	4,313	17,607
Kerr-McGee Oil and Gas Onshore LP	1966			3	1,878	1,615	13,800
QEP Energy Company	684	22	22	2	944	808	5,095
Newfield Production Company	252	41	41	1	858	1,072	3,085
Berry Petroleum Company	367	38	38	1	1,264	1,359	1,983
Bill Barrett Corporation	54	15	14	39	258	236	942
Ultra Resources, Inc.	55	23	23	4	315	639	806
Koch Exploration Company	31	1	1	-	7	6	564
Anadarko Uintah Midstream, LLC	18	1	1	0	916	121	458
Crescent Point Energy U.S. Corp	63	12	6	0	163	246	452
EP Energy E&P Company, L.P.	32	5	5	0	130	122	397
Whiting Petroleum Company	36	1	1	0	10	8	237
El Paso Midstream Group, Inc	37						132
QEP Field Services Company	5	4	4	1	127	96	82
Rosewood Resources, Inc.	9	1	1	0	49	16	59
US Oil Sands (Utah) Inc.	1	3	1	13	71	55	42
Enduring Resources, LLC	6	0	0	0	5	4	42
Red Rock Gathering Company, LLC	3	1	1	0	89	50	40
Ute Energy, LLC	4	1	1	-	7	8	37
Gasco Energy, Inc	4	0	0		7	17	23
Axia Energy, LLC	2	0	0	0	5	9	15
Monarch Natural Gas, LLC	2	0	0	0	34	20	14
Linn Energy, LLC	1	0	0	0	4	3	9
American Gilsonite Company	1	20	20	0	3	5	9
Mid-America Pipeline Company, LLC	1	1	1	1	70	94	5
Red Leaf Resources, Inc.	1	9	2	1	21	7	3
Rhine Construction	1	4	2				
Total Registr. 12/23/14	5476	257	238	157	12,340	11,144	64,561

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C. Emission data in Uinta Basin

- EPA Greenhouse Gas Reporting Program – Subpart W – Uinta Basin 2013
[Data Steward – Cindy Beeler]

Summary data collected by the Greenhouse Gas Reporting Program for 2013

This data was reported to EPA by facilities as of 8/18/2014.

All emissions data is presented in units of metric tons of carbon dioxide equivalent using GWP's from IPCC's AR4 (see FAQs tab)

Facility Id	FRS Id	Facility Name	Basin	Total reported emissions from Onshore Oil & Gas Production	Total Emissions from Onshore Oil & Gas Production by Gas		
					CO2 emissions (non-biogenic)	Methane (CH4) emissions	Nitrous Oxide (N2O) emissions
1009282	110002994190	575 Uinta Basin QEP Energy Company	575 - Uinta Basin	418,397	29,157	389,205	35
1008167	110055512529	Berry Petroleum Company - Uinta Basin 575	575 - Uinta Basin	111,371	15,647	95,699	24
1009357	110028136700	Bill Barrett Corporation - Uinta Basin (575)	575 - Uinta Basin	212,379	66,835	145,436	108
1007481	110015761996	ConocoPhillips' Uinta (575)	575 - Uinta Basin	76,965	536	76,429	
1008086	110002004964	Crescent Point Energy U.S. Corp - Uinta Basin	575 - Uinta Basin	32,222	6,037	26,170	15
1008354	110034207481	EOG Resources, Inc. 575 Uinta basin	575 - Uinta Basin	562,551	1,513	561,038	1
1009350	110054613539	EP Energy E&P 575 Uinta basin	575 - Uinta Basin	132,740	5,533	127,204	4
1008109	110055512271	Gasco Energy Uintah Basin Operations	575 - Uinta Basin	55,180	611	54,569	1
1008407	110055512388	Newfield.575.Uinta	575 - Uinta Basin	106,375	54,682	51,617	77
1009165	110028136700	Uinta Basin - AAPG Province 575	575 - Uinta Basin	440,990	60,028	380,955	7
1008169	110032607089	Uinta Basin Wexpro Company	575 - Uinta Basin	18,550	11	18,539	
1011221	110014428770	Ultra Resources/Uintah Basin	575 - Uinta Basin	43,960	37,665	6,277	18
1009389	110055516035	XTO Energy Inc 575 Uintah	575 - Uinta Basin	174,221	13,688	160,492	42

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C. Emission data in Uinta Basin

- NSPS OOOO Annual Reports and Well Completion Notifications
[Data Steward – Cindy Reynolds' Team]

EPA R8 receives annual reports via paper copies so resource-intensive to review, evaluate and analyze. Well completion notifications are submitted to dedicated email box however, there is uncertainty about the universe of such notifications since if an Operator is already required to report to a State regulator (e.g. Utah DOGM) then they are not required to report to EPA.

DATA GAPS

A. Disparity between top-down and bottom-up emission estimates in UB

- From EPA's GHGRP-W, the sum of the Uinta Basin methane emissions reported in 2013 equals 2.1 million metric tons of CO₂e which is equivalent to ~4.4 billion cubic feet of methane. This equates to **1.0%** of the gas produced in these five counties in 2013 (per UDOGM data). This compares to results from a 2012 field study in the Uinta Basin which suggested an emission rate of methane leakage at **6.2-11.7%** of the total production.
- From the UBOS research modeling efforts, **methane** and **total VOC** emissions for the oil/gas sector within the UB in the bottom-up inventory (EPA NEI-2011) are lower by a factor of **4.8** and **1.8** than the top-down estimates, respectively.

DATA GAPS

- B. Tribal Minor Source Registrations – Need def'n "Indian country" to compare Tribal Minor Source registrations to producing/active wells to:
- assess gaps in operator registrations
 - ensure not missing or duplicating sources in emission inventory accounting
- C. US Well ID Numbers are not currently reported in minor source registration or permit applications which make it resource intensive to cross check with other reports and update data base as facilities change ownership (e.g. to compare # producing wells with registered sources to identify potential sources who have not registered). R8 will need to work with OAR/OAQPS to require the inclusion of US Well ID in future minor source registrations.

DATA GAPS

- D. Estimate of emission reductions already achieved to-date that are beyond regulatory requirements to strategically target further emission reductions in UB:
- **CAA settlements** requiring emission reductions on existing and “future” facilities which are pre-NSPS OOOO dates.
 - **NEPA** EIS ROD COAs on Kerr-McGee and Gasco and EA ROD COAs for XTO for pre-NSPS OOOO facilities.
 - **Minor sources already controlling** (pre-NSPS OOOO) as identified through data mining of Tribal Minor Source Registrations.

CONSENT DECREE Emission Reductions at pre-NSPS OOOO Facilities

- Injunctive Relief & Projects - Annual
 - ~3,800 VOC tons (incl. ~600 HAPs Tons)
 - ~2,600 NOx Tons
 - ~1,600 CO Tons
 - ~830 Methane Million cubic feet conserved
 - ~10,200 homes heated
 - ~68,000 acres of trees planted
- “Future” facilities
[CD Enter Date – NSPS OOOO]
To be estimated

UB CAA Settlements

- Kerr-McGee/Anadarko
- Wind River Bill Barrett
- Dominion/XTO
- Gasco/Monarch
- Miller Dyer/Whiting

CONSENT DECREE Requirements for “Future” Facilities

- Low or no-bleed pneumatic devices
- Low-emission glycol dehydrators
- Catalysts on new natural gas fired compressor engines >500hp
- Controls on new storage tanks w/ PTE >20 TPY VOC (~ > 60 BOPD oil or > 14 BOPD condensate)

NEPA RODs

- Kerr-McGee/Anadarko – Greater Natural Buttes EIS
- Gasco – Gasco EIS
- XTO – Riverbend EA

ACEPMs (Applicant-committed environmental protection measures) at pre-NSPS OOOO Facilities

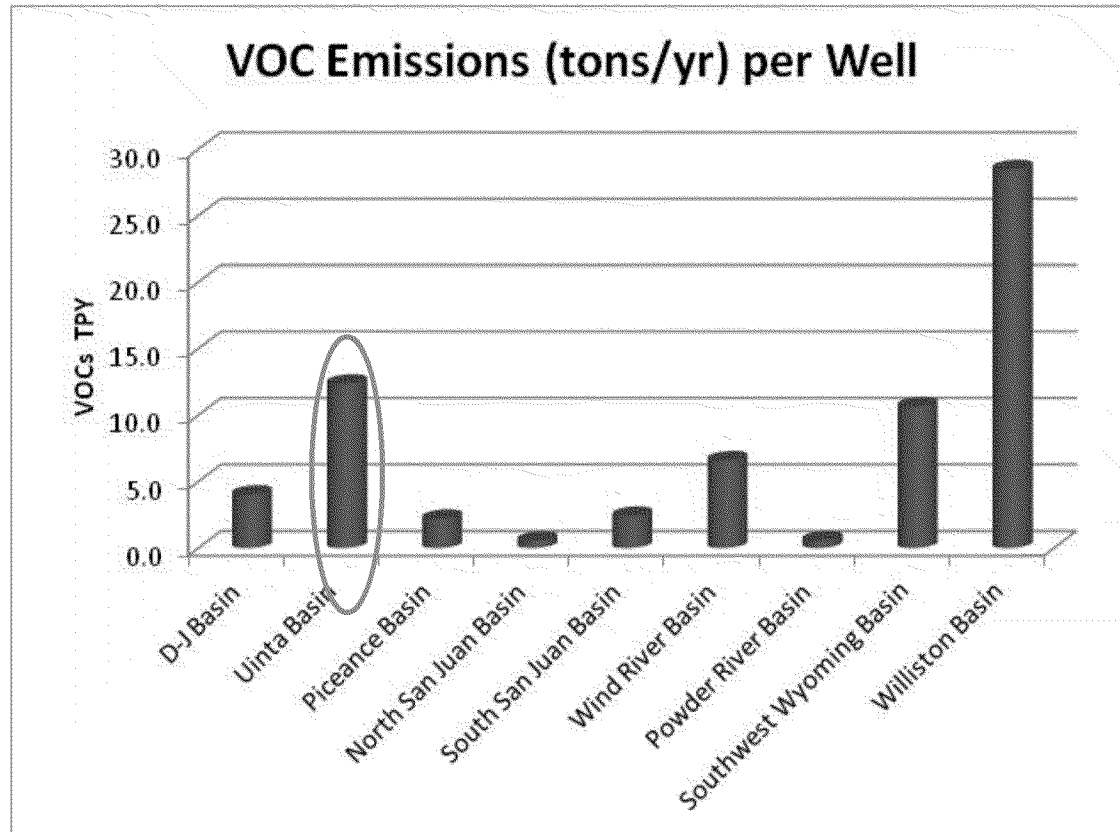
- Low emission dehyds at existing & new wellpads & Compressor stations
- Electric compression where feasible
- Controls on existing & new oil/cond tanks
- Retrofit existing high-bleed pneumatics w/ low bleed
- Solar-powered chemical pumps
- Catalysts on new compressor engines
- Annual DI&M program
- Tier II drill rig engines
- Natural gas or LPG drill rig engine pilot
- Wet gas central gathering system
- Centralize tank locations for water and condensate as feasible
- Install dry seals on new centrifugal compressors.
- Install and optimize artificial lift.

DATA GAPS

- E. Estimate of emission reductions being achieved on "new" facilities via NSPS OOOO :
- Storage tanks installed >4/12/13 controlled from 4/15/14 or start-up whichever is later
 - Storage tanks installed >8/23/11 and <4/12/13 controlled by 4/15/15
 - Pneumatic controllers installed >10/15/13 must be low- or no-bleed
 - Hydraulically fractured natural gas wells – reduced emission completions where gas captured rather than flared > 1/15/15

Emission Differences by Basin

(WRAP Phase III)

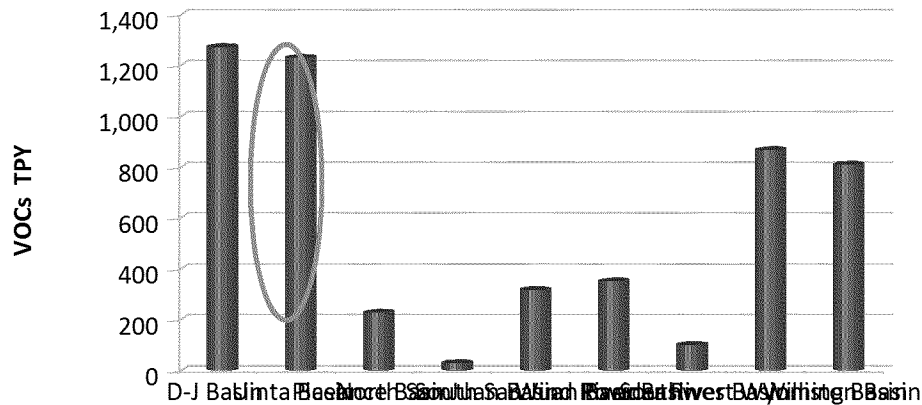


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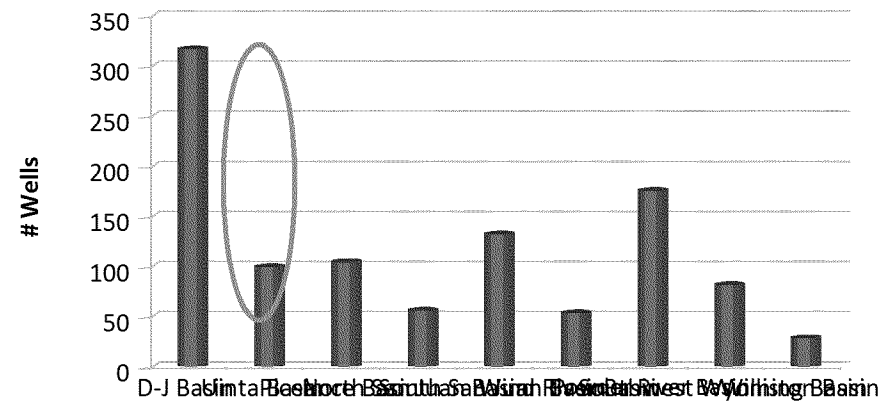
Emission Differences by Basin

(WRAP Phase III)

VOC Emissions (tons/yr) per MMBOE



Wells per MMBOE



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